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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/608,234	06/30/2000	Jeff J. Gue!!	A-1559	9986

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EXAMINER

LAO, LUN YI

ART UNIT

PAPER NUMBER

2677

DATE MAILED: 03/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/608,234

Applicant(s)

GUELL ET AL.

Examiner

LUN-YI LAO

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 November 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-3, 6-8, 10-14, 17, 20-21 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hale et al(5,317,394) in view of Ferguson(5,343,313) and Groves et al(5,414,439).

As to claims 1-3, 6-8, 10-14, 17, 20-21 and 27, Hale et al teach an enhanced vision system for mobile vehicles(aircrafts) comprising an array of non-turret mounted vision sensors(71, 72, 73, 74)(each or sensors(71, 72, 73, 74) having a plurality of an array of sensors) disposed on a vehicle(aircraft, 70)(see figures 4-6; column 5, lines 58-68 and column 6, lines 1-9); a recording medium(22) for storing the image signals from the array of vision sensors(71, 72, 73, 74)(see figures 1, 5-6; column 1, lines 10-13; column 3, lines 49-68 and column 4, lines 1-2); a processor(20); a helmet-mounted display and a tracking system(see figure 1 and column 4, lines 1-18). Hale et al teach a display for receiving output signal from the processor(20, 39) and superimpose it on the

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helmet-mounted display(see figures 1, 2; column 4, lines 1-18 and lines 65-68; and column 5, lines 1-26).

It would have been obvious to have sensors(71-74) are unmovable (positioned) sensors since Hale et al have disclosed the movable sensors can be replaced by unmovable sensors(see column 2, lines 39-43); a large number of staring sensors fixed to a host platform would reduce cost by eliminating moving parts; and staring sensors(unmovable) sensors are more reliable than movable sensors(see column 1, lines 65-68 and column 2, line 1).

Hale et al fail to disclose a see-through visor and the images output from a processor and the real images are in conformity with one another to create a seamless effect for the operator.

Ferguson teaches a method for superimpose virtual images on a see-through visor(14)(LCD display) which selectively permits an operator to view actual images disposed in front of the visor(see figures 1-11; column 3, lines 7-18; column 4; lines 54-68; column 5, lines 8-11; column 6, lines 6-13, lines 54-59 and lines 64-67 ). It would have been obvious to have modified Hale et al with the teaching of Ferguson, so as to allow an operator to view both outside scene and electronic images(see column 5, lines 8-11) and the operator's eye are being protected from electromagnetic energy by using a see-through LCD visor(14)(see column 1, lines 25-31).

Groves et al teach images output from a processor(14) and the real images are in conformity with one another to create a seamless effect for the operator(see figures 1, 4-7; column 3, lines 27-68 and column 4, lines 1-16). It

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would have been obvious to have modified Hale et al as modified with the teaching of Groves et al, so an operator could accurately judge the distances of the objects even objects are not visible in the real scene(see abstract; column 1, lines 22-68 and column 2, lines 1-14).

As to claims 2-3, 6 and 8, Hale et al teach these array of vision sensors(71, 72, 73, 74) is mounted close to the cockpit area and in the upper radome area of the nose of the aircraft(70) (see figures 5-6 and column 6, lines 1-4).

As to claims 7-8 and 11, Hale et al teach the array of vision sensors(71-74) having an elevation field of view of approximately 24E or having a field of view straddling the horizontal horizon, or hemispherical field of view or a spherical field of view(see figures 5-6 and column 6, lines 1-4).

As to claims 12-14, Hale et al teach one of vision sensors(71-74) providing an infrared search and track function; at least one sensors(71-74) providing a separate signal to the processor(20) and the orientation of the vision sensors(71-74) are different(see figures 1, 5-6; column 1, lines 5-26; column 2, lines 51-68; column 3, lines 1-2, lines 34-35 and lines 53-68; column 4, lines 1-18 and lines 36-64; and column 6, lines 1-4).

As to claim 20, Hale et al teach a manual input device(26)(see figure 1 and column 5-18).

3. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hale et al(5,317,394) in view of Ferguson(5,343,313), Grove and Hale et al(5,418,364).

Hale et al(5,317,394) as modified fail to disclose the array of vision sensors having an elevational field of view of approximately 51E.

Hale et al(5,418,364) teach a system having an array of vision sensors(22, 24) having an elevational field of view of approximately 51E(see figure 3 and column 4, lines 27-39). It would have been obvious to have modified Hale et al(5,317,394) as modified with the teaching of Hale et al(5,418,364), so as to eliminate the number of an array of sensors to view same range of field of view.

4. Claims 4-5 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hale et al(5,317,394) in view of Fergason(5,343,313), Grove and Myrick(5,166,789).

As to claims 4-5 and 15, Hale et al as modified fail to disclose one of the infrared sensors having higher resolution than the others and one of the vision sensors is reward-looking.

Myrick teaches a system having an infrared sensors(12, 14)(infrared camera) having different resolutions(see figures 1-3 and column 6, lines 29-67) and sensor(14) is rearward-looking. It would have Myrick been obvious to have modified Hale et al as modified with the teaching of Myrick, so a view could observe two different images from two camera(one is for viewing a general image(A), one is for viewing a detail image(B or C))(see figure 2 and column 6, lines 33-43).

5. Claims 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hale et al(5,317,394) in view of Fergason(5,343,313), Grove and Muller(4,057,782).

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Hale et al as modified fail to disclose an operational parameter of a vehicle.

Muller teaches a system having a group of operation parameters(speed, altitude, attitude and engine status) selected by an operator(see figure 5; column 5, lines 57-68 and column 4, lines 1-14). It would have been obvious to have modified Hale et al as modified with the teaching of Muller, so a pilot would know the operating conditions of an aircraft.

6. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hale et al(5,317,394) in view of Fergason(5,343,313), Grove, Myrick(5,166,789) and Kaneko(5,237,418).

Hale et al as modified teach two different images can be displayed on a split screen. Hale et al as modified fail to provide picture-in-picture image on a display.

Kaneko teaches a display system for display two different images(P-TV or C-TV) on a picture-in-picture screen mode or a split screen mode(see figures 3, 6 and column 4, lines 19-30). It would have been obvious to have modified Hale et al as modified with the teaching of Kaneko, so a viewer could observe most interested image on a bigger display portion and less interested image on a smaller display portion.

7. Claims 22-24, 26 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hale et al(5,317,394) in view of Fergason, Grove and Okamura et al(5,572,343).

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As to claims 22-24, 26 and 28, See the discussion of Hale et al, Fergason and Grove above.

Hale et al as modified teach a controller for selectively controlling an intensity of light pass through the screen(see Fergason=s figures 1-11; column 7, lines 12-25 and column 14, lines 3-66).

Hale as modified fail to selectively disable selected regions of the screen so that light can not pass through those selected region.

Okamura et al teach a display device having a plurality of regions(see figures 24, 25, 36(a)-36(e)) and a plurality of light shutters(56<sub>1</sub>-56<sub>3</sub>) and a controller(61) for selectively controlling an intensity of light pass or not pass(opaque) the screen regions(see figures 33-35; abstract; column 17, lines 32-57; column 23, lines 22-68; column 24 and column 25, lines 1-25). It would have been obvious to have modified Hale et al as modified with the teaching of Okamura et al, since Fergason has disclosed a helmet-mounted display having a plurality of shutters(21-23)(see figures 1-10 and column 7, lines 12-53) and an operator could selectively view different part of outside images and the different part of electronic images(see column 2, lines 54-61).

As to claim 26, Hale et al teach an operator can selectively manually control(a keyboard, a mouse, a joystick) and select particular output images from a plurality of sensors(71-74)(see figures 1, 5 and column 4, lines 1-8).

8. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hale et al(5,317,394) in view of Fergason(5,343,313), Grove, Okamura et al(5,572,343) and Krouglicof et al(4,649,504).



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Hale et al as modified fail to disclose an emitter mounted on a helmet of an operator.

Krouglicof et al teach a display system having an emitter(3) mounted on a helmet of an operator and a detector(5,7)(see figure 1 and column 2, lines 26-51). It would have been obvious to have modified Hale et al as modified with the teaching of Krouglicof et al, since Hale et al have disclose a motion sensor mounted on a helmet for detecting the position of an operator=s head(see Hale=s column 4, lines 7-19) and Hale et al as modified by Krouglicof et al would have a three dimensional position data(see Krouglicof=s abstract).

### ***Response to Arguments***

9. Applicant's arguments with respect to claims 1-28 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Schofield et al(5,670,935) teach a display for display a seamless images(44,46, 48)(see figure 3).

Schofield et al(6,498,620) teach a projection display(see figures 14-16) for projecting a seamless images(44,46, 48)(see figure 3).

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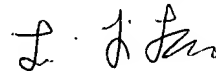
Kulas(6,809,704) teach a plurality of image portion(122, 204).

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lun-yi Lao whose telephone number is 571-272-7671. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on 571-272-7681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

February 28, 2006



Lun-yi Lao

**Primary Examiner**